Quantuck Canal Bridge
(Beach Lane Bridge)
Beach Lane, spanning Quantuck Canal
Westhampton Beach
Suffolk County
New York

HAER No. NY-182

PHOTOGRAPHS
WRITTEN HISTORICAL DATA

Historic American Engineering Record
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HISTORIC AMERICAN ENGINEERING RECORD

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Location: Beach Lane spanning Quantuck Canal, west of Quantuck Bay and east of Moriches Bay, Village of Westhampton Beach, Town of Southampton, Suffolk County, New York. Bridge is 400 feet north of Dune Road.

UTM: N 4519120
E 700070
New York State Quad: Eastport Quad

Date of Construction: 1935

Style: Double leaf, Strauss-style trunnion bascule bridge with reinforced concrete girder approach spans.

Engineer/ Builder: Built for the Suffolk County Highway Department. Approach road and approach spans designed by the Suffolk County Highway Department, March 7, 1935. Bascule span designed and all bridge specifications approved by the Strauss Engineering Company, Chicago, Illinois. Fabricated and erected in 1935 by the Fort Pitt Bridge Works, Canonsburg, Pennsylvania under contract C-6408 with the County of Suffolk. Electric motors and controls supplied by the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania, under contract 64-A. Lift mechanism gears supplied by the Earle Gear and Machine Company, Philadelphia, Pennsylvania under contract SO 8260.

Present Owner: Suffolk County, New York.

Present Use and Condition: Spalled concrete has exposed steel reinforcement bars in bents and girders. Bascule span girders and beams are corroded and suffering from loss of section. Facades of all four towers are spalled in many places.

Significance: An example of a patented, Strauss trunnion, double leaf bascule bridge. Bridge has a bascule span operator's tower with a highly stylized, Art Deco frieze depicting four scenes from Long Island history.

Materials of Construction:

Precast, reinforced concrete piles, 35 feet long and 15 inches square, support the pier foundations. Bascule span piers are pile bents with steel cross beams. Approach span pile bent piers carry interior concrete girders and false arch fascia girders supporting concrete deck slab. Approach spans have concrete balustrades. Each bascule leaf has two main girders, three floor beams, and five I beam stringers.

Dimensions:

Bridge length is 164 feet. Bascule span is 64 feet 6 inches center-to-center of main trunnions. On both sides of the bascule span are two approach spans, each individual span 20 feet long. Bridge has an out-to-out width of 38 feet, a clear roadway of 30 feet, and a deck area of 6,200 square feet. Each leaf has a deck surface 26 feet long and bridge has a horizontal clearance between bascule pier fenders of 50 feet 4 inches. A 5 foot 6 inch wide pedestrian sidewalk is on one side of the bridge and a narrower 1 foot 6 inch walkway on the other side. A tower is located at each corner of the double leaf bascule span, two towers for machinery and two for operating control equipment. Operators towers are 10 feet 8 inches by 14 feet 4 inches. Machinery room towers have an external dimension of 15 feet 9 inches by 14 feet 4 inches. Towers are reinforced concrete with a facade of stone blocks three inches thick and 2 feet, 4 inches high. All steel reinforcing rods are of the "deformed" type.

Each bascule leaf is 32 feet 3 inches from the center line of the trunnion to the end of the leaf. Riveted steel plates form the main bascule girders, two per leaf. Bascule girders range in height from 2 feet 4 inches to 6 feet. Each leaf has three 33 inch high riveted plate floor beams spaced 13 feet 6 inches center-to-center and a single trunnion counterweight girder. Main trunnion shaft is 9 inches in diameter. Trunnion piers are each 4 feet 6 inches wide. Segmental trunnion shaft gear rack has a radius of 6 feet 3 inches. Counterweights are not of identical weight. Northern counterweight uses 1243.91 cubic feet of concrete to produce a 205,708 pound counterweight. South counterweight weights 215,314 pounds and uses 1302.64 cubic feet of concrete. Five 15 inch rolled steel 1 beams are used as floor stringers. Both spans have diagonal lower lateral bracing. Bascule leaves open to a 75 degree angle.

Significant Exterior Features: Approach spans have false arch fascia girders and concrete balustrades. Tower "A," the operator's tower, has a glass-enclosed control room with an aluminum roof. The most aesthetically and historically significant feature of the bridge is the bas-relief frieze below control room windows. Frieze depicts an early Euro-American settler with a horse and plow, a seaman harpooning a whale, coast watchers signaling a schooner, and an American Indian hunting. All four scenes are highly stylized, Art Deco images from Long Island history.

Major Alterations and Additions: Originally bridge had a creosoted plank sub-surface with a surface of asphalt plank blocks, 8 inches wide and 1-1/2 inches thick.

Additional Information: This bridge replaced a center pier swing bridge originally at this site. Bascule span operated by two Westinghouse Electric and Manufacturing Company three phase, 60 cycle, 220 volt alternating current lift motors, each with five horsepower and 863 rpm at full load. Each bascule leaf has one motor mounted solenoid brake and one floor mounted emergency solenoid brake as well as a two horsepower lock gear motor.

Project Information: The documentation of the Quantuck Canal Bridge was prepared by the Historic American Engineering Record (HAER), National Park Service, during the summer of 1987 for the New York State Historic Bridges Recording Project. This project was sponsored by the New York State Department of Transportation and under the supervision of Eric DeLony, Chief & Principal Architect, HAER. This report was written by Andrew Cole and Charles Scott. When citing this report, please credit the Historic American Engineering Record and the authors.

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